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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,414	05/04/2001	Chun-Pu Hsu	LIE 113	7713

7590 07/17/2002
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EXAMINER

NGUYEN, TRAN N

ART UNIT PAPER NUMBER

2834

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/848,414

Applicant(s)
Hsu

Examiner
Nguyen, Tran N

Art Unit
2834



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (e). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 3, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. **Claim 1** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, “the coil axis” is indefinite because it is unclear how the so-called “the coil axis” is defined, i.e., is the coil axis defined to be parallel to the longitudinal axis of the stator core or is it defined to be perpendicular to the longitudinal axis of the stator core? Furthermore, the term “the coil axis” lacks antecedent basis.

In light of the spec., the coil axis is understood as the axis parallel to the longitudinal axis of the stator core.

Claim Rejections - 35 USC 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a

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whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 1, as understood,** is rejected under 35 U.S.C. **103(a)** as being unpatentable over Applicant's Admitted Prior-Art figures 8A-8H (hereafter APA figs 8A-8H), in view of Finegold (US 4446393) and Nihei et al (US 4857786).

APA figs 8A-8H substantially discloses all aspects of the invention, except for the following limitations:

(a) the flat coil having a plurality of turns of a helically wound flat wire, wherein the coil is wound in a direction that is normal to the coil axis, and an insulator is installed at a distal axial end of the coil; and, wherein,

(b) the thickness of the flat coil is determined in relation with the thickness dividing number which is a division of the vertical post's depth by the number of winds of a rated rotary speed of the machine.

Regarding the limitations in the subsection (a), Finegold, however, teaches a stator assembly (figs 2-4, and 10-11) comprising a flat coil (48) having a plurality of turns of a helically

wound flat wire, wherein the coil is wound in a direction that is normal to the coil axis, and an insulator (348) is installed at a distal axial end of the flat coil for electrical insulating between the stator core and the coil. Finegold teaches that the stator structure with this particular flat coil would enable to obtain high field strength with reduction in the size, weight and cost of a motor.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the stator of the APA figs 8A-8H by employing a flat coil having a plurality of turns of a helically wound flat wire, wherein the coil is wound in a direction that is normal to the coil axis, and an insulator is installed at a distal axial end of the flat coil, as taught by Finegold. Doing so would enable to obtain sufficient field strength with reduction in the size, weight and cost of a motor.

Furthermore, the Examiner takes Official Notice that a flat coil having a plurality of turns of a helically wound flat wire, wherein the coil is wound in a direction that is normal to the coil axis is well known in the art (see cited refs for support evident of this statement). Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the stator of the APA figs 8A-8H by employing a flat coil having a plurality of turns of a helically wound flat wire, wherein the coil is wound in a direction that is normal to the coil axis because it is well known in the art.

Regarding the limitations of the subsection (b), particularly the thickness of the flat coil is determined in relation with the thickness dividing number which is a division of the vertical post's depth by the number of winds of a rated rotary speed of the machine.

Nihei, however, teaches that the speed of a motor is determined in corresponding to a predetermined number of turns of the field winding coils into which a current is made to flow. In other words, the high or low speed of a motor can be determined in corresponding to the number of turns of the stator field windings. Also, as mentioned above, Finegold teaches a stator having a flat coil formed with a plurality of coil turns, wherein the flat coil is shown having a flat wire formed with a certain thickness. Therefore, it would have been obvious to an artisan to apply the Finegold's teaching of stator having a flat coil in combination with the Nihei's essential teaching of number of coil turns corresponding to a rated speed, to select a workable thickness range of the flat wire in corresponding to the provided depth of the stator winding slot. In other words, by applying the Nihei's teaching, it would have been obvious to an artisan to select a flat wire having a thickness that is less than the thickness calculated by dividing the stator slot's depth by a predetermined number of winding turns, which correspondingly determined by a rated rotary speed of a motor that employs the stator. This would ensure that the flat coil, with a predetermined number of winding coil turns, would be suitably fitted within a provided winding slot's depth of the stator. By the same token, it would have been obvious to an artisan to select a

suitable width of the flat coil so that the flat coil would be well accommodated within the winding slot's width.

Furthermore, as mentioned above, Finegold teaches a stator having a flat coil formed with a plurality of coil turns, wherein the flat coil is shown having a flat wire formed with a certain thickness and width. Those skilled in the art would realize that the Finegold's important teaching of a stator having a flat wound coil with a plurality of turns being axially overlaid one upon another in the direction normal to the coil axis would provide excellent field strength with less cost and overall weight. By applying this essential teaching, an artisan would have necessary skills in the art to modify the Finegold's flat coil by changing size, i.e., the width and the thickness of the flat wire of the flat coil for a suitable mechanical fit and/or electrical application of the stator assembly. This would have involved a mere change in the size or shape of the flat coil, which is taught by Finegold. It has been held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the stator's flat coil by selecting the flat wire with a thickness less than the thickness calculated by dividing the stator slot's depth by a predetermined number of winding turns, and a width that is smaller than the winding space of the slot's width. Doing so would ensure a suitable fit of the flat coil within the stator's winding slot results in high structure

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integrity of the stator assembly. Furthermore, doing so would have involved a mere change in the size or shape of the flat coil taught by Finegold. It has been held that a change in size or shape is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran Nguyen whose telephone number is (703) 308-1639.

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956. The fax phone number for this Group is (703) 305-3431 (32).

A handwritten signature in black ink, appearing to read 'Tran Nguyen', with a long horizontal flourish extending to the right.

TRAN NGUYEN

PRIMARY PATENT EXAMINER

TC-2800